



PHOTOGRAPHY FAQ

Q I've heard that image stabilisation can reduce blur from camera shake. How does it work and how effective is it?

A A digital camera's CCD sensor is similar to photographic film in that a certain amount of light must hit it for the camera to capture a well-exposed picture. This usually means that scenes with insufficient light must be captured over longer periods. However, the problem with long shutter times is that any movement of the camera will blur the image.

As a rule, the slowest shutter speed you can use without a tripod is equal to one divided by the focal length (or its 35mm equivalent in a digital camera). So at normal settings, anything slower than a $\frac{1}{40}$ -second shutter speed runs the risk of being blurred. At 3x zoom setting, even fast speeds of around $\frac{1}{125}$ of a second are risky.

It's not always convenient to carry a tripod around, and you certainly won't have one for those impromptu shots, so many cameras now include optical image stabilisation.

This uses a tiny gyroscopic sensor to detect movement of the camera, along with a means of counteracting this movement. The technique varies between manufacturers: Panasonic's system employs an extra moving lens to steer light from single points in a scene on to single sensors on the CCD. Konica Minolta cameras move the CCD itself.

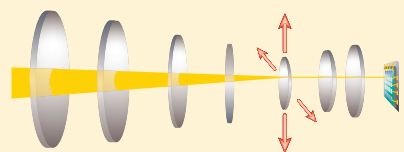
The net result is the same, in that light is directed to the same point of the CCD and you avoid blurred photographs.

This often has a significant effect on the sharpness of shots in low light or telephoto zoom settings. However, it's important that you don't rely too heavily on these systems. Optical image stabilisation can compensate for only a finite amount of movement. Move too far and the system will eventually reach the boundary of its movement range and you'll still end up with blurred photographs.

It's certainly worth turning the option on, but if you want the best low-light and telephoto photography out of your camera, you really need to use a tripod.

If you're worried about the expense, a small desktop tripod, which will slip easily into any camera bag, will do the job and shouldn't cost more than around £15.

ben@computershopper.co.uk



▲ Panasonic's optical image stabilisation uses an extra lens that counteracts camera shake by redirecting light from a particular point in the scene to just one part of the CCD

REVIEW DIGITAL CAMERA

CASIO Exilim Card EX-S500

RATING ★★★★★

PRICE £229 inc VAT

SUPPLIER www.savastore.com

DETAILS www.casio.co.uk

At just 13.7mm at its skinniest point, the EX-S500 is spectacularly thin. Hit the power button, though, and the lens extends in three sections to provide a 3x zoom range. If nothing else, this camera is an amazing feat of compact engineering.

Fortunately, it has other commendable traits, too. Paltry internal memory aside, it's well specified with a 5-megapixel CCD, 2.2" LCD screen and the ability to record VGA-resolution video in MPEG-4 format. The lithium-ion battery is necessarily skinny and has only a 700mAh capacity, but it still managed to power the camera through 300 shots on a single charge, which is impressive. The only downsides to the slim design are that it isn't the most comfortable camera to hold, and removing cards from the SD slot can be tricky. Still, with a supplied cradle for USB transfers and recharging, you may never need to do so.

The camera is extremely fast, taking just over a second to start up and take a photo. There's a four-second gap between shots, but this falls to 2.5 seconds in Continuous mode. You can browse photos stored in memory at lightning speed, and flicking quickly through them gives the impression of a video animation. The buttons and menus are quick to use too. We particularly like the separate



shutter buttons for photos and movies, and the speech bubbles that momentarily appear onscreen next to icons to explain their meaning.

Image quality was often excellent in our tests, giving photos warm, natural colours and as much detail as we'd expect from a 5-megapixel sensor. Low-light shots without the flash were rather grainy and sometimes underexposed, unless we delved into the S500's various scene presets. There are no manual exposure controls. Still, most of shots we took with the camera were either decent or superb.

The S500 isn't for enthusiasts, but as a friendly camera that you can take anywhere, it's ideal.

Ben Pitt



Incredibly thin; quick and easy to use



Low-light pictures are grainy

SPECIFICATIONS 2,592x1,920 resolution, 3x zoom lens, 8MB internal memory and SD slot. **Part code** S500GYDDA

HOTLIST DIGITAL CAMERA

CANON PowerShot S2 IS

RATING ★★★★★

PRICE £333 inc VAT

SUPPLIER www.dabs.com

DETAILS www.canon.com

Canon's PowerShot S2IS might weigh just over half a kilo, but it's incredibly comfortable to use. Its bright 12x zoom lens is mechanically stabilised, which helps the 5-megapixel sensor produce sharp, blur-free pictures, even when shooting at full zoom from your hand. It takes rich, warm stills, and records movies at 640x480 and 30fps. A stunning macro mode lets you focus on objects right up to the lens surface. If you want a camera that has a big zoom lens and plenty of shooting options, this is the one to buy.



SPECIFICATIONS 2,560x1,920 resolution, stabilised 12x zoom lens (36-432mm), 16MB SD card. **Part code** 9883A007AA

HOTLIST TRANSPARENCY SCANNER

EPSON Perfection 4180 Photo

RATING ★★★★★

PRICE £135 inc VAT

SUPPLIER www.savastore.com

DETAILS www.epson.co.uk

If you want to get the best from your photos and slides when transferring them to your PC, you have to aim for maximum scanning resolution. The Perfection 4180 Photo scans at a maximum of 4,800x9,600dpi, so you can be sure you'll capture every last detail. It can scan up to six slides at once, so it shouldn't take too long to digitise your entire collection.



SPECIFICATIONS 4,800x9,600 optical resolution, 35mm, slide, 120-roll transparency adaptor, USB Hi-Speed interface. **Part code** B11B170024



REVIEW DIGITAL CAMERA

PANASONIC DMC FX9

RATING ★★★★★

PRICE £300 inc VAT

SUPPLIER www.jessops.comDETAILS www.panasonic.co.uk

It's hard to pinpoint exactly why the FX9 makes those who see it coo with excitement. It's partly down to the sumptuous matt black finish and partly the bright 2.5" screen, which makes photos look rich and beautiful. The camera is extremely compact, too – it's barely taller than the height of its screen. A couple of design flourishes on the front and back ensure that it's comfortable enough to operate with one hand.

The other thing that makes this camera ideal for impromptu snappers is its optical image stabilisation (see FAQ, opposite). Panasonic's Mega OIS dramatically improves the sharpness of pictures taken in low light, at telephoto zoom settings or at times when you have only one hand free. We found that it frequently made the difference saving pictures that would otherwise have been too blurry.

In use, the FX9 oozes quality, with a fast auto-focus and a two-second interval between shots, which increases to four seconds with the flash enabled. A burst mode captures shots indefinitely at 1.1fps, or a succession of six at 2fps, all at the top 6-megapixel resolution. With such a quick camera, you'll never have to miss another fast-moving shot again.



However, pressing the Menu button reveals that this is very much an instant rather than an enthusiast's camera. It provides white balance, ISO speed and auto-focus options, and even a choice of 4:3 (PC desktop), 3:2 (35mm film) and 16:9 (widescreen) aspect ratios, but none of the manual control options serious photographers would expect. For the point-and-click photographer it'll do the job, but if you're looking to get serious about your photography you'll soon hit its limits.

Auto bracketing is available, which takes shots up to +/-1 stops either side of the camera's automatic exposure calibration to give you a wider dynamic range and a choice of images. It didn't always work as we expected, though, and the supposedly overexposed picture often looked exactly the same as the normal one. At least the scene modes provide a way of achieving long exposure times for low-light photography without the flash: Night Scenery mode ranges from 1/4 to eight seconds and Starry Night offers a choice of

15-, 30- or 60-second exposures. However, in these modes other settings, such as white balance presets, are unavailable so you'll have to make these adjustments in your photo editing application once you have imported the image into your PC.

Image quality was always decent but rarely exceptional. Outdoor shots tended to be a little undersaturated, which made skin tones in particular appear slightly dreary. It handled high-contrast scenes well, brightly exposing the foreground without bleaching out the sky. The camera performed best when using its flash, which illuminated subjects up to three metres away. However, at this and further distances flash photography suffered from a painted effect that appeared to be the result of over-zealous noise reduction. Indoor photography without the flash was often underexposed and suffered from the same painted effect, except when we used the Night Scenery mode to achieve a long exposure.

Despite our complaints, it's fair to say that the FX9's pictures were usually up to scratch, which, for a camera at this price, means they were excellent. However, the camera itself is likely to receive more admiring glances than the pictures it takes. We still can't help but to warm to it, but those who are looking for a camera that doubles as a fashion accessory are better off with Casio's EX-S500.

Ben Pitt

✓ A joy to behold and use

✗ Image quality doesn't live up to the price; limited manual control

SPECIFICATIONS 2,816x2,112 resolution, 3x zoom lens, 16MB SD card.
Part code DMCFX9BB

HOTLIST SCANNER

MUSTEK Be@rpaw 4800TA Pro II

RATING ★★★★★

PRICE £60 inc VAT

SUPPLIER www.dabs.comDETAILS www.mustek.co.uk

It may have been around for a while, but this scanner still offers the entry-level buyer above-average transparency results. It's easy to operate, with a simplified control panel for those who find the TWAIN interface too much. Scan quality isn't perfect, it's not as fast as many other scanners and there are no Mac drivers, but it's a great value all-rounder.

SPECIFICATIONS 2,400x4,800 optical resolution, 35mm, slide transparency adaptor, USB Hi-Speed interface.
Part code 98-155-00010



HOTLIST DIGITAL CAMERA

NIKON D50

RATING ★★★★★

PRICE £530 inc VAT

SUPPLIER www.cameras2u.comDETAILS www.nikon.co.uk

Nikon's D50 is the cheapest digital SLR camera we've reviewed. It offers great versatility and, like all SLRs, changeable lenses. The supplied lens is OK, but you'll probably want to upgrade it.

The D50 captures photos at a resolution of 3,008x2,000, and we found its shots to be rich and detailed and to exhibit a subtleness of colour that's not found in a compact camera. This camera is truly excellent value.

SPECIFICATIONS 3,008x2,000 resolution, 18-55mm lens (27-83mm 35mm equivalent), takes SD memory. **Part code** D50(UK) 18-55KIT SI



HOTLIST DIGITAL CAMERA

CANON PowerShot A510

RATING ★★★★★

PRICE £130 inc VAT

SUPPLIER www.dabs.comDETAILS www.canon.co.uk

Canon has crammed a lot of controls into the A510, but it's still easy to use. It's comfortable to hold and uses standard AA batteries. The 3.2-megapixel camera has a 4x optical zoom and produces clear and vivid photos in automatic mode. Slip it into manual mode, though, and you can set the aperture and shutter speed, which is unusual for such an inexpensive camera.

SPECIFICATIONS 2,048x1,536 resolution, 4x optical zoom, 16MB SD memory. **Part code** 9717A007AA





REVIEW DIGITAL CAMERA

NIKON
CoolPix 5600

RATING ★★★★★

PRICE £137 inc VAT

SUPPLIER www.pcworld.co.ukDETAILS www.nikon.co.uk

Nikon has a habit of producing low-cost, no-frills digital cameras with excellent image quality, and the CoolPix 5600 continues this tradition. Its bulbous design isn't exactly stylish but the camera is compact and comfortable to hold. Power comes from a pair of AA batteries, so you'll need to budget for rechargeable replacements.

The 1.8" screen looks small by today's standards, but it's perfectly useable and leaves room for an optical viewfinder, a mode dial and the usual smattering of buttons. Manual control is extremely basic, though, with just resolution, white balance presets, exposure compensation and a few scene presets to control image quality.

The 5600 is reasonably swift, taking three seconds between shots. It took six seconds to switch on and take its first shot, but turning off the startup screen reduced this to four seconds. However, when using the flash the camera took up to 14 seconds between shots.

The best thing about this camera is its image quality. A 5-megapixel sensor is great at this price, and the fine detail it captures is matched by

exemplary colours in a range of conditions. It consistently put in the best performance of the four cameras reviewed in *What's New* this month, with warm, natural skin tones indoors and out. In low light without the flash it resorted to exposure times of up to two seconds, so you'll need a steady surface on which to rest the camera (and a static subject) but we prefer this to underexposed, grainy images captured in low light with a short exposure.

The lack of manual control isn't a huge problem as the automatic settings are so capable, and at this price the CoolPix 5600 is a bargain.

Ben Pitt

✓ Beautiful pictures in a compact, affordable package

✗ Basic controls; slow to recharge its flash

SPECIFICATIONS 2,592x1,944 resolution, 3x zoom lens, 14MB internal memory and SD slot. **Part code** VAA310EO

CHOOSING A...

DIGITAL
CAMERA

Follow our step-by-step guide to identify your ideal camera

1 A digital camera with the specifications in grey below will suit someone looking for a point-and-click camera that produces images that look decent when printed at 6x4". It has a TFT screen for previewing, reviewing and deleting shots and for changing settings. Such cameras cost around £100. Cheaper models are available, but their basic quality means they are best avoided.

2 An additional optical viewfinder allows you to take pictures when strong sunlight makes the TFT screen hard to see. You can also preserve batteries by switching the screen off.

3 The camera's top resolution depends on the size of its CCD sensor. A two-megapixel camera produces 1,600x1,200 photos, but with higher resolutions you can enlarge photos without making them blocky. Three megapixels is common, and you can get five or more without spending a bomb.

4 A digital zoom only guesses the extra detail required to zoom in on a subject. Far better is an optical zoom with a moving lens that enlarges the image as it hits the CCD. The lens should also have a quick and accurate auto-focus.

5 Serious photographers need manual control over focus, aperture, shutter speed and white balance and, ideally, plenty of buttons for quick access. Many cameras offer preset modes to improve results.

6 Consider hidden costs. Most cameras will require a memory card upgrade to at least 64MB if they are to hold more than a dozen pictures at a time. Some come with internal rechargeable batteries, making the camera compact, while some accept AA batteries, allowing you to carry spares.

FILL IN YOUR SPECS HERE

(Recommended minimum in grey)

RESOLUTION: 2,046x1,536 pixels

ZOOM: 2x optical

MONITORING: 1" colour TFT screen

SUPPLIED MEMORY: 16MB

BATTERIES: Disposable

REVIEW DIGITAL CAMERA

PENTAX
Optio S55

RATING ★★★

PRICE £159 inc VAT

SUPPLIER www.savastore.comDETAILS www.pentax.co.uk

On paper, the Optio S55 is largely indistinguishable from the Optio S5z and many of the other cameras in this month's Labs test (see page 182), with a 5-megapixel sensor, 3x optical zoom and 2.5" LCD. The only obvious distinction is its price, which is between £28 and £86 lower.

However, closer inspection reveals other differences. The camera's body feels thin and looks as if it's made from metal-effect plastic, although it's apparently made of aluminium. It's powered by two AA batteries, which makes the camera larger than those that use a lithium-ion battery, although at 89mm wide and 135g it's hardly big or heavy. Video is captured at 320x240 resolution rather than the more usual 640x480. The video mode's auto exposure also lets it down, reacting in uneasy jumps to changes in lighting conditions.

The S55 is operated with the familiar combination of a mode dial, a few buttons, a five-way pad and onscreen menus, although one button switches the role of the pad, giving quick access to resolution, compression quality and exposure compensation. The S55 was in no hurry to take pictures, though, taking five seconds between shots without the flash and seven seconds with flash.

While it lacks priority or manual exposure modes, the S55 offers plenty of control, including manual white balance, sharpness, saturation and contrast controls. Outdoor shots were warm and vibrant on automatic settings, and flash photography was well exposed. However, images had a slight softness. Automatic settings couldn't cope with indoor photography without the flash, although the Night Scene mode used with the Tungsten white balance preset worked well enough.

The S55 is a reasonable performer at an attractive price but, unless you must have a large screen, Nikon's CoolPix 5600 is a much better bet.

Ben Pitt

✓ Big screen; low price

✗ Poor video recording

SPECIFICATIONS 2,592x1,920 resolution, 3x zoom lens, 11MB internal memory and SD slot. **Part code** 18443